

CLAIMS

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2     The invention claimed is:

3     1.     A hydrofoil system for lifting a boat out of water an amount  
4           sufficient to reduce drag while still allowing the boat to be  
5           powered by a conventional inboard-outboard drive, wherein the boat  
6           has a hull with a bottom, a bow, a stern with port and starboard  
7           trim tabs, and a substantial center which is intermediate the bow  
8           of the hull and the stern of the hull, said system comprising:

9           a)     a front hydrofoil unit;

10          b)     a center hydrofoil unit; and

11          c)     a pair of rear hydrofoil units;

12           wherein said front hydrofoil unit is for depending from the bottom  
13           of the hull at the bow thereof;

14           wherein said pair of rear hydrofoil units are for depending from the  
15           port and starboard trim tab units of the hull, respectively; and

16           wherein said center hydrofoil unit is for depending from the bottom  
17           of the hull at the substantial center thereof.

18     2.     The system as defined in claim 1, wherein said front hydrofoil unit  
19           comprises a mounting portion;

20           wherein said front hydrofoil unit comprises a hydrofoil portion;

21           wherein said mounting portion of said front hydrofoil unit is for  
22           mounting to the bottom of the hull at the bow thereof;

23           wherein said mounting portion of said front hydrofoil unit is for  
24           depending from the bottom of the hull at the bow thereof;

25           wherein said hydrofoil portion of said front hydrofoil unit mounts  
26           to said mounting portion of said front hydrofoil unit; and

27           wherein said hydrofoil portion of said front hydrofoil unit depends  
28           from said mounting portion of said front hydrofoil unit.

- 1     3.     The system as defined in claim 2, wherein said mounting portion of  
2           said front hydrofoil unit comprises a pair of upper plates;  
3           wherein said pair of upper plates of said mounting portion of said  
4           front hydrofoil unit are disposed in a V-shape along a common edge  
5           thereof;  
6           wherein said pair of upper plates of said mounting portion of said  
7           front hydrofoil unit are for mounting to the bottom of the hull at  
8           the bow thereof; and  
9           wherein said pair of upper plates of said mounting portion of said  
10          front hydrofoil unit are for depending from the bottom of the hull  
11          at the bow thereof.
- 12    4.     The system as defined in claim, 3, wherein said pair of upper plates  
13          of said mounting portion of said front hydrofoil unit have through  
14          bores.
- 15    5.     The system as defined in claim 3, wherein said mounting portion of  
16          said front hydrofoil unit comprises a stanchion; and  
17          wherein said stanchion of said mounting portion of said front  
18          hydrofoil unit depends along said common edge of said pair of upper  
19          plates of said mounting portion of said front hydrofoil unit.
- 20    6.     The system as defined in claim 5, wherein said mounting portion of  
21          said front hydrofoil unit comprises a lower plate; and  
22          wherein said lower plate of said mounting portion of said front  
23          hydrofoil unit depends from said stanchion of said mounting portion  
24          of said front hydrofoil unit.
- 25    7.     The system as defined in claim 6, wherein said lower plate of said  
26          mounting portion of said front hydrofoil unit contains through  
27          bores.

- 1        8.     The system as defined in claim 6, wherein said mounting portion of  
2                said front hydrofoil unit comprises a pair of struts;  
3                wherein said pair of struts of said mounting portion of said front  
4                hydrofoil unit extend from said pair of upper plates of said  
5                mounting portion of said front hydrofoil unit to said lower plate  
6                of said mounting portion of said front hydrofoil unit, respectively.
- 7        9.     The system as defined in claim 7, wherein said hydrofoil portion of  
8                said front hydrofoil unit comprises an upper plate;  
9                wherein said upper plate of said hydrofoil portion of said front  
10               hydrofoil unit attaches to said lower plate of said mounting portion  
11               of said front hydrofoil unit; and  
12               wherein said upper plate of said hydrofoil portion of said front  
13               hydrofoil unit depends from said lower plate of said mounting  
14               portion of said front hydrofoil unit.
- 15       10.    The system as defined in claim 9, wherein said upper plate of said  
16               hydrofoil portion of said front hydrofoil unit contains through  
17               bores;  
18               wherein said through bores in said upper plate of said hydrofoil  
19               portion of said front hydrofoil unit align with said through bores  
20               in said lower plate of said mounting portion of said front hydrofoil  
21               unit so as to form aligned through bores; and  
22               wherein said aligned through bores receive upper bolts.
- 23       11.    The system as defined in claim 9, wherein said hydrofoil portion of  
24               said front hydrofoil unit comprises an extension; and  
25               wherein said extension of said hydrofoil portion of said front  
26               hydrofoil unit depends from said upper plate of said hydrofoil  
27               portion of said front hydrofoil unit.

- 1      12.    The system as defined in claim 11, wherein said hydrofoil portion  
2            of said front hydrofoil unit comprises a lower plate; and  
3            wherein said lower plate of said hydrofoil portion of said front  
4            hydrofoil unit depends from said extension of said hydrofoil portion  
5            of said front hydrofoil unit.
- 6      13.    The system as defined in claim 12, wherein said lower plate of said  
7            hydrofoil portion of said front hydrofoil unit has through bores.
- 8      14.    The system as defined in claim 13, wherein said hydrofoil portion  
9            of said front hydrofoil unit comprises a stanchion;  
10           wherein said stanchion of said hydrofoil portion of said front  
11           hydrofoil unit attaches to said lower plate of said hydrofoil  
12           portion of said front hydrofoil unit; and  
13           wherein said stanchion of said hydrofoil portion of said front  
14           hydrofoil unit depends from said lower plate of said hydrofoil  
15           portion of said front hydrofoil unit.
- 16     15.    The system as defined in claim 14, wherein said stanchion of said  
17           hydrofoil portion of said front hydrofoil unit has through bores;  
18           wherein said through bores in said stanchion of said hydrofoil  
19           portion of said front hydrofoil unit align with said through bores  
20           in said lower plate of said hydrofoil portion of said front  
21           hydrofoil unit so as to form aligned through bores; and  
22           wherein said aligned through bores receive lower bolts.
- 23     16.    The system as defined in claim 14, wherein said hydrofoil portion  
24           of said front hydrofoil unit comprises a hydrofoil;  
25           wherein said hydrofoil of said hydrofoil portion of said front  
26           hydrofoil unit depends from said stanchion of said hydrofoil portion  
27           of said front hydrofoil unit; and

- 1            wherein said hydrofoil of said hydrofoil portion of said front  
2            hydrofoil unit extends equidistantly out from said stanchion of said  
3            hydrofoil portion of said front hydrofoil unit.
- 4        17.    The system as defined in claim 1, wherein said center hydrofoil unit  
5            comprises a pair of stanchions;  
6            wherein said center hydrofoil unit comprises a hydrofoil;  
7            wherein said pair of stanchions of said center hydrofoil unit are  
8            for mounting to the bottom of the hull at the substantial center  
9            thereof;  
10          wherein said pair of stanchions of said center hydrofoil unit are  
11          for depending from the bottom of the hull at the substantial center  
12          thereof; and  
13          wherein said pair of stanchions of said center hydrofoil unit are  
14          for straddling the bottom of the hull at the substantial center  
15          thereof.
- 16       18.    The system as defined in claim 17, wherein said hydrofoil of said  
17           center hydrofoil unit depends from said pair of stanchions of said  
18           center hydrofoil unit; and  
19           wherein said hydrofoil of said center hydrofoil unit extends  
20           equidistantly outwardly from said pair of stanchions of said center  
21           hydrofoil unit.
- 22       19.    The system as defined in claim 1, wherein each rear hydrofoil unit  
23           comprises a pair of stanchions;  
24           wherein each rear hydrofoil unit comprises a hydrofoil;  
25           wherein said pair of stanchions of each rear hydrofoil unit are for  
26           mounting to an associated one of the port and starboard trim tabs;  
27           and

1            wherein said pair of stanchions of each rear hydrofoil unit are for  
2            depending from the associated one of the port and starboard trim  
3            tabs.

4        20.    The system as defined in claim 19, wherein each stanchion of each  
5            rear hydrofoil unit is inverted L-shaped;  
6            wherein each stanchion of each rear hydrofoil unit has a vertical  
7            portion;  
8            wherein each stanchion of each rear hydrofoil unit has a horizontal  
9            portion; and  
10          wherein said horizontal portion extends outwardly from said vertical  
11          portion thereof.

12       21.    The system as defined in claim 20, wherein said horizontal portion  
13            of each stanchion of each rear hydrofoil unit has through bores; and  
14            wherein said through bores in said horizontal portion of each  
15            stanchion of each rear hydrofoil unit are for receiving screws for  
16            attaching said pair of rear hydrofoil units to the port and  
17            starboard trim tabs, respectively.

18       22.    The system as defined in claim 20, wherein said hydrofoil of each  
19            rear hydrofoil unit depends from said pair of stanchions of an  
20            associated rear hydrofoil unit; and  
21            wherein said hydrofoil of each rear hydrofoil unit extends  
22            equidistantly outwardly from said pair of stanchions of said  
23            associated rear hydrofoil unit.